ANTECEDENTS AND CONSEQUENCES OF FLOW STATE IN VIRTUAL COMMUNITIES HOSTED BY COMPANIES

By

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Bachelor of Science

Mangalore University

Karnataka, India

2004

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
MASTER OF SCIENCE
December, 2007

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STATE IN VIRTUAL COMMUNITIES

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ACKNOWLEDGEMENTS

I would like to express sincere appreciation and gratitude to my advisor Dr. Byoungho Jin for her continued guidance throughout my research. I also wish to thank for her constant support, guidance and encouragement exhibited during my graduate program. I would also thank my committee members, Dr. Jane Swineey and Dr. Donna Branson for their encouragement and helpful suggestions in various stages of my thesis. I also wish to thank faculty and students who have helped me with my thesis survey.

I wish to thank Mom, Dad, Ujwal, Uthpal, Smitha, and Kundyana family (Father in law, Mother in law, Praveen, Mranalini, Vinod, Mouna and cute Aari), and other family members for their boundless love and affection and for the trust and confidence bestowed on me during the entire program. I also like to thank Anil and all other friends here in Stillwater and elsewhere for their unconditional affection and friendship.

I would extend my heartfelt thanks to the department of Design Housing and Merchandising faculty, staff and graduate students. And finally, I could not have completed this thesis without the continuing support of my husband, Dimple Kundiyana. I thank him for his help, patience, confidence, and loving and enduring care, and I also thank him for being there in both good and bad days!

Thank you all.

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CHAPTER I

INTRODUCTION

Background

According to the U.S. Census Bureau (2006), Internet retail sales for the year 2006 were $26.3 billion, corresponding to a 23% increase over 2005. This rapid growth of e-commerce reflects the convincing advantages for the online retailing business. In the present era, the computer media is going through substantial social changes by engaging people around the world to communicate with each other. A computer platform that enables a group of people with common interests to converse on a selected topic is termed virtual community (Hagel & Armstrong, 1997). It is estimated that over 40 million people around the world are participating in some form of virtual community at any given time (Kim & Jin, 2006).

Definition of Virtual Community

Virtual community is defined as "an aggregation of individuals or business partners who interact around a shared interest, where the interaction is at least partially supported and/or mediated by technology and guided by some protocols or norms" (Porter, 2004, p. 2). Virtual communities have been characterized as groups of people who have a common goal and who communicate through the electronic media to satisfy their needs and desires (Dennis, Pootheri, & Natarajan, 1998). Ridings, Gefen, and

Arinze(2002) offer a broader definition for the term “virtual community,” defining it as a “group of people with common interests and practices that communicate regularly and for some duration in an organized way over the Internet through a common location or mechanism” (p. 273).

History of Virtual Communities

According to Hagel and Armstrong (1997, p. 134), “The notion of community has been at the heart of the Internet since its inception.” The term community originated from the Latin root word *communis*, which was formed by coupling the words, *cum* (meaning together) and *unus* (meaning one). Consequently, it follows that a community is a group in which individuals come together with a common purpose or objective (Fernbeck & Thompson, 1995). Virtual communities first existed on the Internet in 1979 with the development of Usenet newsgroup, followed by Well’s newsgroup in 1985. These two groups are widely regarded as the first virtual communities on the Internet (Ridings & Gefen, 2004). However, communities now exist in globally distributed, virtual spaces. *As Rheingol has stated, "*the universe of virtual communities seems to grow larger and larger as one's imagination stretches to accommodate the knowledge of what is happening right now" (1994, p. 146).

Types of Virtual Communities

Virtual communities formed on the Internet are classified into member-initiated and organization-sponsored communities (Porter, 2004). Member-initiated communities are established and managed by the members. Member-initiated communities develop either social or professional relationships amongst the members. An example of a virtual community based on professional relationships is cancer.com, and examples of virtual

communities based on social networking include myspace.com and facebook.com. Organization-sponsored communities are sponsored either by commercial or non-commercial firms; examples of these communities are eBay.com and amazon.com (Lauden & Traver, 2004). According to Porter (2004), organization-sponsored virtual communities are developed to satisfy a specific purpose, mission, or goal of a sponsoring firm or a government organization. Organization-sponsored virtual communities are also stated to be task-oriented, as organizations derive economic value from their operations (Kozinets, 2002). Figure 1 shows a virtual community hosted by eBay.com (commercial community) and Figure 2 shows a virtual community hosted by facebook.com (social community).

Figure 1. An example of an organization-sponsored virtual community: eBay.com.

Figure 2. An example of a member-initiated virtual community: facebook.com.

Values of Virtual Communities

A virtual community benefits both the company and its members (Hagel & Armstrong, 1997). A virtual community with features such as discussion groups or chat sites enhances a business by positioning it close to consumers. Subsequently, a virtual community gives a company a competitive advantage in the marketplace and encourages participants to transform into loyal customers (Kim, Lee, & Hiemstra, 2004). Virtual communities also offer benefits to participants in several ways. A virtual community creates an interactive environment by encouraging participants to actively engage in community activities such as chatting, posting questions or information on the forums, reading blogs, etc., which in turn benefits the company by developing a better understanding of the company's consumers and their needs. A virtual community also allows participants to gain required knowledge about products and services (Hagel &

Armstrong, 1997; Kozinets, 2002). In addition, a virtual community can play a major role in the personal life of participants by creating and maintaining passionate friendships and relationships (Park & Floyd, 1995).

Flow Theory

Flow is regarded as a psychological condition in which a person simultaneously feels cognitively efficient, motivated, and happy (Moneta & Csikszentmihalyi, 1996). Hoffman and Novak (1996) defined flow as "the state occurring during network navigation which is characterized by a seamless sequence of responses facilitated by machine-interactivity, intrinsically enjoyable, accompanied by a loss of self-consciousness, and self-reinforcing" (p. 57). In their research, Hoffman and Novak described network navigation as a broader term for online activities. Flow is also regarded as a multi-dimensional construct with characteristics that include skill, challenge, enjoyment, time distortion, etc. (Csikszentmihalyi, 1975).

The concept of flow has been proposed recently by several researchers as an important factor for understanding participant behavior in online activities. Hoffman and Novak (1996) conceptualized flow in online activities as a cognitive state experience that holds consumers in a computer hypermedia environment. Online media allow participants to actively engage in a wide variety of activities, encouraging them to be involved in the activities. This intense involvement in online media allows consumers to attain flow state. This explanation is supported by Hsu and Lu (2004), who termed flow state as an extremely enjoyable experience often experienced during intrinsically enjoyable activities such as games, chatting, and shopping. They further verified the effect of social norms, perceived critical mass, and flow on the behavior of online game

users. Flow is regarded as an important tool in motivating consumers to continually participate in online media, and thus it is considered an important concept in e- tailing.

The Problem Statement

In spite of the fact that both individuals and firms can derive value from virtual communities, a lack of research on consumer participation behavior in online communities exists. After conducting an extensive search of online communities, substantial gaps in the research literature were found.

First, virtual communities have existed in some fashion for almost 30 years, but little is known about the motivational factors that prompt people to use these communities. Scholarly literature in this area is usually anecdotal and without any systematic method or an empirically validated framework. Prior research has had a tendency to focus only on the sociological (e.g., Preece & Krichmar, 2003) and technological aspects of the communities (e.g., Balasubramanian & Mahajan, 2001), while some research is purely conceptual (e.g., Porter, 2004).

Second, the virtual community is an important business model for the World Wide Web. Virtual communities have broadened marketing capabilities and are having a great impact on sales, product and service development, supplier network, information quality, and distribution channels (Wang, Yu, & Fesenmair, 2002). In order to reap the benefits of virtual communities, though, one must understand the antecedents of consumer virtual community participation and the outcomes of participation in the virtual community. However, to date only a limited number of studies have been systematically

conducted on analyzing why customers participate in virtual communities and how these individuals become loyal to the communities.

Third, in the last few years, flow has been extensively studied in the context of information technology, computer mediated environment (Hoffman & Novak, 1996), and online shopping (Koufaris, 2002), but virtually no scholarly effort has been undertaken to understand the impact of flow state experiences while participating in virtual community activities.

Fourth, flow has been shown to yield positive attitude and outcome in a computer-mediated environment (Finneran & Zang, 2005), and to have broader implications for e-commerce (Hoffman & Novak, 1996). Although the practical implications of the flow experience are clear, important, and promising, a lack of empirical studies to understand the outcomes of flow in a virtual community has been observed.

Purpose of the Study

The goal of the present study is to propose a conceptual model to understand (1) the impact of antecedents (perceived Internet skills, perceived Internet challenges, intrinsic motivation, extrinsic motivation, sociability, and usability) on virtual community participation level, (2) the relationship between virtual community participation and flow state experience, and (3) the consequences of virtual community participation level and flow state, and to empirically test the proposed model.

Significance of the Study

This study is significant from both theoretical and managerial perspectives. By testing the proposed model, the study will contribute to the body of literature. The literature review on antecedents of virtual community participation, as well as the relationship between the virtual community and the flow state, will benefit future researchers in gaining some conceptual views on these topics. The study, by examining the outcomes of virtual community participation and flow experiences on the virtual community, will provide a platform for future research.

It is perceived that the outcomes of this study will be practically significant by facilitating the creation of virtual communities that are more responsive to users and by enabling companies to better understand participant behavior. This study will also help companies understand the importance of flow state features in virtual communities, which will aid in making virtual experiences more enjoyable. Finally, this study might help community organizers to analyze the benefits of incorporating the flow state feature in virtual community activities. By utilizing this feature, a virtual community could experience positive results such as increased traffic and repetitive visits.

Hypotheses

H1a: Consumer perceived Internet skills increase virtual community participation.

H1b: Consumer perceived Internet challenges increase virtual community participation.

H1c: Consumer extrinsic motivation increases virtual community participation.

H1d: Consumer intrinsic motivation increases virtual community participation.

H1e: Functions of sociability in a virtual community increase consumer participation.

H1f: Functions of usability in a virtual community increase consumer participation.

H2a: Consumer perception of Internet skills increases flow state.

H2b: Consumer perception of Internet challenges increases flow state.

H3: Consumer participation in a virtual community increases flow state.

H4a: Virtual community participation increases consumer loyalty towards the virtual community.

H4b: Flow state in a virtual community increases consumer loyalty towards the virtual community.

Operational Definition of the Terms

Virtual community: "An aggregation of individuals or business partners who interact around a shared interest, where the interaction is at least partially supported and/or mediated by technology and guided by some protocols or norms" (Porter, 2004, p. 2).

In this study, online community is used interchangeably to denote virtual community.

Flow state: "The holistic sensations that people feel when they act with total involvement" (Csikszentmihalyi, 1975, p. 36).

Perceived Internet skills: A consumer's perception about his/her capacity to carry on the online activities (Hoffman & Novak, 2000).

Perceived Internet challenges: A consumer's perception regarding whether the online activity contains enough opportunities to warrant his/her action (Hoffman & Novak, 2000).

Sociability: "Sociability is an aspect of virtual community attributes that is concerned with developing software, policies and practices to support social interaction online" (Preece, 2001, p. 2).

Usability: "Usability is an aspect of virtual community attributes that is concerned with how intuitive and easy it is for individuals to learn to use and interact with a product in a virtual community" (Preece, 2001, p. 2).

Extrinsic motivation: "Performance of an activity because it is perceived to be instrumental in achieving valued outcome that are distinct from the activity itself" (Teo, Vivien, & Raye, 1999, p. 26).

Intrinsic motivation: "Performance of an activity for no apparent reinforcement other than the process of performing the activity per se" (Teo et al., 1999, p. 26).

Loyalty: "An act of repeated purchase behavior presented over a period of time driven by a favorable attitude towards the subject" (Keller, 1993, p. 8). In the present study, e-loyalty is defined as perceived loyalty towards a virtual community with an intention to revisit the community.

Limitations of the Study

1. Our sample was collected in one particular southwestern state of the U.S. and represented only the college student demographic group. Therefore, the results may vary in different states and with different demographic groups.
2. This study included only organization-sponsored virtual community participants as respondents. Because the organization-initiated virtual community is different from the member-initiated virtual community, results may vary for member-initiated community participants.

CHAPTER II

REVIEW OF LITERATURE

Virtual Community

Definition

A virtual community consists of a group of people who interact in a virtual environment. The members have a purpose, are supported by technology, and are guided by norms and policies of the community (Preece, 2000). Virtual communities are distinctly different from face-to-face communities in terms of interaction, as virtual community interaction is mediated through computer media. Chat sessions, bulletin boards, forums, and discussion boards are common features of virtual communities.

According to Ridings and Gefen (2004), people join a virtual community to satisfy their needs, which may include information exchange, social support, recreation, and friendship. Research studies conducted in the past have indicated that people use the Internet to participate in virtual communities, not merely for making purchases (Horrigan, 2001). Despite the extensive adaptation of these virtual communities, a great deal of difficulty remains in precisely defining a virtual community (Daugherty, Eastin, & Gangadharbatla, 2005; Porter, 2004). Because of the application of virtual community by researchers in varied fields, a lack of consensus on its definition prevails. For this reason, the definitions of a virtual community reflect the perspectives taken by different

research groups, including those from sociology, psychology, and e-tailing. One dictionary definition of virtual community is "a group sharing common interests in cyberspace rather than in physical space" (http://www.businessabilities.ca/?q=en/learning-online-tips/glossary). Wellman (1997) provided a sociological perspective of virtual community by stating, "when a computer network connects people, it is a social network" (p. 179). The process of evolution from electronic to social network gives the necessary platform for the development of a virtual community. E-tailing entrepreneurs have defined virtual community as "an aggregation of individuals or business partners who interact around a shared interest, where the interaction is at least partially supported and/or mediated by technology and guided by some protocols or norms" (Porter, 2004, p. 1). A widely accepted definition of virtual community is given by Rheingold (1994) as "social aggregation that emerges from the Internet when enough people carry on public discussion long enough, with sufficient human feeling, to form a web of personal relationships in the cyberspace" (p. 57).

Characteristics of Virtual Community

Previous literature suggests that virtual community can be characterized by its attributes. Porter (2004) mentioned five attributes that could describe any virtual community: (1) purpose, (2) place, (3) platform, (4) population, and (5) profit model.

Purpose describes the specific content of communication among the community members. Identifying the purpose of a virtual community is very important for its successful functioning since the community is developed around the common interests of the participants (e.g., sports, health, shopping). In a traditional community, place refers to a specific geographical location, but in a virtual community it refers to a structural and

sociological consciousness of a location (Blanchard, 2004; Porter, 2004). Platform refers to the technical design of interaction among members. Interaction in a virtual community when managed by technology is regarded as the platform for all other activities. It is further divided into synchronous (e.g., chat rooms and instant messaging), asynchronous (e.g., email forum and bulletin boards), and hybrid (both synchronous and asynchronous communication design) (Porter, 2004).

Population refers to the type of interaction among the members in a virtual community**.** It explains whether the interaction is in the form of computer supported social networks that support strong, weak, and stressful social ties among members; in the form of small groups or networks that have a socially close relationship among members; or in the form of virtual public or computer-mediated spaces where existence is transparent and open (Porter, 2004). The profit model attribute focuses on economic value generated by a virtual community (Porter, 2004). A company can generate revenues from virtual communities in forms of advertising fees (e.g., Yahoo groups), subscription fees (e.g., America Online), or transaction fees (e.g., eBay and Napster). Apart from fees, a virtual community also contributes to building a strong customer base for the company.

Benefits of Virtual Community

An effectively managed virtual community benefits both the participants and the organization (Rothaermel & Sugiyama, 2001). Organizations regard the virtual community as an important business model to make a profit in the business-to-consumer (B2C) Internet space. Companies use virtual communities to fulfill their business goals. Previous authors have mentioned that the virtual community benefits the company in various ways: increasing sales (Brown, Tilton, & Woodside, 2002); developing positive

word of mouth (Bickart & Schindler, 2001); increasing website traffic (Bughin & Hagel, 2000); raising stronger brands and escalating advertising revenues (Rothaermel & Sugiyama, 2001); developing successful market segmentation and amplifying product support (Hagel & Armstrong, 1997); supporting new product development (Moon & Sproull, 2001); and most importantly, developing a stronger relationship between a firm and its customer (Brown et al., 2002; Hagel & Armstrong, 1997). A few virtual communities, such as the transaction community (e.g., Ebay), the education community (e.g., Smart Force), and the financial community (e.g., Instuit's Quicken), have proven to be commercially successful by generating revenues and profits (Sangwan, 2005). Some travel companies, such as virtualtouris.com and lonelyplanet.com, have also achieved more traffic by incorporating the virtual community into their business models (Wang et al., 2002).

Members of a virtual community also benefit from participating. Members share information and trust from the ongoing interaction (Figallo, 1998). A virtual community provides its members with a suitable environment for evaluating the quality and reliability of products and services they encounter (Fomburn, 1996). For example, information about a product can be evaluated and judged based on the information provided by the users in a virtual community. Individuals prefer to continue transactions with those they have previously transacted with in a virtual community (Rothaermel & Sugiyama, 2001). A virtual community has also been shown to satisfy a participant's need for obtaining product knowledge, interaction with other members, and entertainment. In a survey by Ridings and Gefen (2004), it was shown that participation in a virtual community activity helps the participant gain enjoyment, self-identity,

attitude, and concepts of accepted behavior leading to social support, friendship, and information exchange, which were regarded as the main reasons for joining a virtual community. Hence, virtual communities are regarded as the most influential tool in shaping consumer opinions, awareness, and behavior (Kim & Jin, 2006). Concisely, it can be stated that people who join a virtual community experience a feeling of connection and belonging and acquire information to satisfy their desired requirements.

Motivations for Virtual Community Participation

Hagel and Armstrong (1997) stated that people participate in a virtual community to satisfy four types of needs: interest, relationship building, transaction, and fantasy. Communities of interest are composed of individuals with shared interests, proficiencies, and enthusiasm in a wide range of areas, including arts, sports, and hobbies. Examples of communities of interest are www.timezone.com, dedicated to wristwatch hobbyists and collectors, and www.gardenweb.com, dedicated to people interested in gardening. Communities of relationships are formed when individuals stumble upon a need to share an exciting, and often intense, life experience such as birth, marriage, divorce, disease, or death. Examples of communities of relationships are www.cancerforums.net and www.divorcesource.com. Communities of transaction focus on relationships based on the exchange of information or economics. Examples of communities of transaction are www.wine.com and www.ebay.com. Finally, communities of fantasy provide people with the prospect of discovering new identities in imaginary worlds. Examples of communities of fantasy are www.espn.net and www.reddragoninn.com.

These needs are further broadly classified under three groups: functional needs, social needs, and psychological needs (Ridings & Gefen, 2004). Functional needs are met

when community members go online to fulfill a specific activity, which can be for a transaction, gathering information, or entertainment. Information exchange is the most frequently cited reason that people to join a virtual community, according to the Pew Internet and the American Life Project survey (Furlong, 1989; Ridings & Gefen, 2004; Wellman, Salaff, Dimitrova, Garton, Gulia, & Haythornthwaite, 1996). Social needs, which include relationships and interactivity among members, are met when people with similar experiences come together to form meaningful personal relationships on a virtual platform. Many studies suggest that virtual communities are the places where people seek social support, a sense of belonging, and encouragement (Hiltz & Wellman, 1997; Wellman et al., 1996). Psychological needs, which include identification, involvement, belonging, and creativity, are met when a virtual community helps its members to learn new things, to cope with challenges, and to escape from daily chores (Wang et al., 2002). Previous research has identified that people who feel lonely and isolated participate in a virtual community not only to exchange information, but also to engage in active small talk for gaining some relief (Ridings & Gefen, 2004; Wellman, 1997).

Flow Theory

Definition

Csikszentmihalyi (1975) introduced the concept of flow and defined it as ‘‘the holistic experience that people feel when they act with total involvement’’ (p. 36). In a flow state, people shift into a shared mode of experience and become absorbed in their activities. This mode is characterized by narrowing the focus of awareness so that

irrelevant perceptions and thoughts are filtered out by means of self-consciousness loss, responsiveness to clear goals and unambiguous feedback, and a sense of control over the environment (Csikszentmihalyi, 1975). Hoffman and Novak (1996, p. 57) defined the concept of flow in a hypermedia as the "state occurring during network navigation which is 1) characterized by a seamless sequence of responses facilitated by machine interactivity, 2) intrinsically enjoyable, 3) accompanied by a loss of self consciousness, and 4) self–reinforcing."

Dimensions of Flow State

Flow is a multidimensional construct comprised of several dimensions: perceived Internet skills, perceived Internet challenges, enjoyment, concentration, control, time distortion, telepresence, mergence, loss of self-consciousness, and attention focus (Webster, Trevino, Ryan, 1993).

Perceived Internet skills and challenges are considered as the most important factors for flow to occur (Csikszentmihalyi, 1975; Ghani, Supnick, & Rooney, 1991; Webster et al., 1993). A flow state will occur only when a balance exists between the consumer's perceived Internet challenges and his/her Internet skills (Csikszentmihalyi, 1975; Hoffman & Novak, 2000). Previous authors have noted that if network navigation does not provide enough challenges to meet their Internet skills, consumers will become either bored (Internet skills exceed challenges) or anxious (challenges exceed Internet skills), and may even exit (Csikszentmihalyi, 1975; Koufaris, 2002; Webster et al., 1993). Enjoyment is the third important dimension of flow state. A significant number of studies have mentioned the importance of enjoyment in a computer mediated activity (Ghani et al., 1991; Malone, 1981; Webster, 1989). Privette and Bundric (1987) defined flow as "an

intrinsically enjoyable experience" (p. 316). Ghani et al. (1991) referred to enjoyment as a key characteristic of flow state. Some researchers also argue that an individual's enjoyment experience in a medium is a direct consequence of flow state attainment (Sherry, 2004). Concentration, the fourth dimension of flow, explains "the extent to which the individual's attention is completely absorbed by an activity such that only little attention is left to consider for anything else" (Hoffman & Novak, 1996, p. 58). This implies that during flow state, an individual's focus is narrowed to a specific field and impertinent thoughts are filtered out (Davis, Bagozzi, & Warshaw, 1992). Control, the fifth dimension, has been referred to as the "level of one's control over the environment and one's action" (Koufaris, 2002, p. 208). A high level of control and convenience in an online medium leads to flow state of a consumer (Koufaris, 2002).

Time distortion, the sixth dimension, has been referred to as the perception of time passing rapidly when engaged in an activity (Hoffman, Novak, & Young, 1998). When a person goes through the state of time distortion, he/she will be in the process of achieving flow state (Finneran & Zhang, 2003). Alternatively, when an individual attains flow state, the time will pass rapidly and the person will lose track of time (Chen, Wigand, & Nilan, 2000). Telepresence, the seventh dimension, is exclusive to the online environment in which users espouse being part of an online activity. Telepresence is mentioned as a sense of being present in a mediated hypermedia environment (Steuer, 1992).

Mergence, the eighth dimension, is defined as an invariable awareness of mind and feeling of intense concentration in a manner that an individual becomes totally unaware of oneself and the surroundings, thereby integrating with the action performed

(Chen et al., 2000). In such a state, the attention becomes so focused that the natural difference between action and awareness disappears (Csikszentmihalyi, 1990). Loss of self-consciousness, the ninth dimension, has been defined as a transcendent feeling of belonging to something of greater importance (Csikszentmihalyi & Rathunde, 1993). An individual in a mergence of flow state has been shown to lose self-consciousness momentarily (Chen et al., 2000). In such a state, not enough attention is left for a person to consider either the past or the future or any other temporarily irrelevant stimuli (Csikszentmihalyi, 1990).

Attention focus, the tenth dimension, refers to "centering of attention on a limited stimuli field" (Csikszentmihalyi, 1975, p. 40). Webster et al. (1993) has mentioned that consumers report the feeling of being "mesmerized" while going through the process of flow. Novak, Hoffman, and Yung (2000) reported that higher attention focus leads to greater flow state experience.

Flow experience has also been observed in numerous activities such as rock climbing, dancing, chess playing, reading, and chatting (Csikszentmihalyi, 1975; Csikszentmihalyi & Lefevre, 1989). According to Hoffman and Novak (1996), flow is a key characteristic in determining an individual's action on the Internet. These researchers indicated that ''flow is the 'glue' holding the consumer in a hypermedia computer mediated environment" (p. 57). The concept of flow concentrates on an individual's subjective experience. Flow state has been shown to strongly influence an individual's personal well being (Moneta, 2004) and to improve personal contentment (Hoffman & Novak, 1996).

Antecedents of Virtual Community Participation

Based on the previous literature, the present study considers six factors affecting virtual community participation: perceived Internet skills, perceived Internet challenges, extrinsic motivation, intrinsic motivation, sociability, and usability. The following discussion introduces the concept of each antecedent.

Perceived Internet Skills and Challenges

Internet skills are presented as one of the strongest predictors of flow (Csikszentmhslyi, 1975; Ghani et al., 1991; Hoffman & Novak, 1996; Trevino & Webster, 1992). Internet skills in a flow state signify the individual's judgment on the capability to use computers (Kaufaris, 2002). Individuals with greater Internet skills are likely to have greater emotional and cognitive responses toward the web (Kaufaris, 2002). Internet skills are also referred to as the individual's level of knowledge or expertise. It is also desirable for participants to acquire the Internet skills necessary to obtain specific information, in addition to the basic knowledge of using a computer. Once consumers attain high Internet skills, the level of enjoyment from online activity has been shown to increase proportionately (Monsuwe, Bendict, Dellaert, & Ruyter, 2004).

Internet challenges posed during an online activity have been described as the main predictor of flow (Csikszentmihalyi, 1975; Ghani et al., 1991; Hoffman & Novak, 1996; Trevino & Webster, 1992). Positive challenges in online media are known to widen the user's online experience since individuals seek opportunities for action (Kaufaris, 2002). Similarly, a unique website will offer greater Internet challenges for the individual and create opportunities to use their Internet skills.

Extrinsic Motivation and Intrinsic Motivation

The Technology Acceptance Model (TAM) is an information systems theory that models how users come to accept and use a technology. The model suggests that perceived usefulness and perceived enjoyment have significant impacts on online usage. Perceived usefulness, regarded as the dimension of extrinsic motivation, and perceived enjoyment, regarded as the dimension of intrinsic motivation, have been identified as important elements in formulating an attitude toward the Internet (Davis, 1989; Teo et al., 1999). Extrinsic motivation is defined as "the performance of an activity because it is perceived to be instrumental in achieving value outcome that are distinct from the activity itself" (Teo et al., 1999, p. 26). Perceived usefulness is defined as the degree to which a person believes that using a particular system could enhance his or her job performance. It is the extent to which an individual believes the use of a system will enhance his/her performance (Saade & Bahli, 2005). Prior studies have indicated perceived usefulness as having a strong relationship with consumer motivation to use the Internet (Davis, 1989; Teo, 2001). Researchers have proven that perceived usefulness will significantly influence a consumer's current and future usage of website activities (Davis, 1989).

Intrinsic motivation is defined as "the performance of an activity for no apparent reinforcement other than the process of performing the activity per se" (Teo et al., 1999, p.26). Researchers have confirmed intrinsic motivation as having a larger impact on influencing computer usage (Davis, 1986, 1989; Teo, 2001). Based on TAM, perceived enjoyment is classified as a dimension of intrinsic motivation. Perceived enjoyment is defined as "the extent to which the activity of using the computer is perceived to be enjoyable in its own right, apart from any performance consequences that may be

anticipated" (Teo, 2001, p. 128). Previous researchers have mentioned the importance of enjoyment on the intentions and behaviors of an individual in using online media (Holbrook, Chestnut, Oliva, & Greenleaf, 1984; Malone, 1981; Webster, 1989). Teo (2001) noted that the individuals who experience more pleasure and joy while using the web are more likely to use the Internet extensively than are others.

Sociability and Usability

Preece (2001) conceptualized two dimensions of virtual community attributes: sociability and usability. "Sociability is concerned with developing software, policies and practices to support online social interactions" (Preece, 2001, p. 2). Important components contributing to sociability include the following:

- Purpose: The purpose of a community should be clearly defined in order to attract its target audience (Wang et al., 2002). A community's mutual interest, requirement, information, services, or support provides a reason for individual members to belong to a community.
- People: People are considered the heart of a community. These participants actively participate in an interaction process and are characterized by individual, social, and psychological need. People in a community play a vital role in its success or failure (Wang et al., 2002).
- Policy: Communities should have policies to direct online behavior and to determine the requirements for joining the community (Wang et al., 2002). Policy provides guidelines that direct member interactions and that help in developing a community (Preece, 2001).

"Usability is related to the ease and innate benefit of a product to the individual" (Preece, 2001, p. 2). The four sub-dimensions of usability include the following:

1. Navigation related to the ease with which users can use or move around a community. Navigation is associated with the amount of effort users expend to interact in a virtual community.
2. Social support signifies the quality and reliability of feedback as a tool to support interaction in a virtual community.
3. Information design refers to the effort needed to use the community website. It also includes the aesthetic aspect of website design, such as visualization and graphic design.
4. Access refers to the type of software used in a virtual community, which needs to be clear and efficient for execution.

Consequence of Virtual Community Participation

Loyalty

Loyalty is defined as the "repeated purchase behavior presented over a period of time driven by a favorable attitude towards the subject" (Keller, 1993, p. 8). True loyalty leads to higher purchase intention, resistance to change, willingness to participate, and higher positive word of mouth (Shankar, Smith, & Rangaswamy, 2003). In the present study, e-loyalty is defined as perceived loyalty towards a virtual community with an intention to revisit the community.

Developing loyalty is crucial for the success of a virtual community. Loyalty towards an online site increases consumer participation and the satisfaction level. Loyalty can be attained through careful planning. Failure of a user to experience emotional and cognitive response during online participation will lead to disappointment and decrease loyalty towards the community. Virtual communities are established to serve potential consumer needs for communication, information, and entertainment (Wang et al., 2002). Understanding loyalty to a virtual community is important because people link their virtual community experiences to the company hosting that particular virtual community (Kim et al., 2004).

Model Development and Hypotheses

This study adopts two theories and one framework to propose a research model: Flow Theory (Hoffman & Novak, 1996), Technology Acceptance Model (TAM) (Davis, 1989), and Virtual Community Attributes Framework (Preece, 2001).

Based on flow theory, we have incorporated Internet skills and challenges (Hoffman & Novak, 1996) into our proposed model. Internet skills is an important motivational factor for participating in an online activity (Kaufaris, 2002). Lack of sufficient Internet skills will discourage an individual's participation. A participant will become bored if he/she lacks the opportunity to use his/her Internet skills and will experience decreased satisfaction. Internet challenges in an online activity have been regarded as another important motivational factor. Internet challenges presented in an activity will provide the necessary platform for the participants to display their Internet

skills with peers (Csikszentmihalyi, 1990). Internet skills and challenges have also been reported to increase flow state in various online activities (Hoffman & Novak, 2000). Since the virtual community is one form of online activity, we have incorporated these two constructs into our model.

The Technology Acceptance Model (TAM) is an information systems theory that models how users come to accept and use a technology. TAM theory proposes that extrinsic motivation (perceived usefulness) and intrinsic motivation (perceived enjoyment) are the predictors of user attitude toward using the technology, subsequent behavioral intentions, and actual usage. Based on this theory, we have incorporated extrinsic and intrinsic motivations in our model. With the validity and reliability of these two dimensions provided by previous studies, and anticipating a direct relationship with participation level, we have incorporated these two dimensions in the proposed model. Further, these dimensions have been accepted by a number of researchers for examining user acceptance and usage behaviors in the multimedia environment (Davis, 1989; Davis et al., 1992; Teo et al., 1999). This study posits extrinsic and intrinsic motivation as important motivational factors behind virtual community participation, considering the fact individuals engage in a virtual community to achieve certain goals.

Based on Preece's (2001) study, we have incorporated two virtual community attributes, sociability (i.e., how well a virtual community facilitates human-human interaction) and usability (i.e., how well a virtual community facilitates human-computer interaction). These attributes are considered necessary for a successful virtual community (Preece, 2001). Therefore, these two attributes may increase participation level in online virtual communities.

The proposed model incorporates flow state and virtual community participation as important antecedents of loyalty towards the virtual community. Flow state has been reported to increase participation in online shopping (Guo, 2004), and virtual community participation has also been identified to increase loyalty (Srinivasan, Anderson, & Ponnavolu, 2002).

Therefore, the basic premises for the proposed model (see Figure 3) are (1) proposed antecedents will increase virtual community participation level, (2) increased virtual community participation level will lead to occurrence of flow state, and (3) increased virtual community participation and flow state will lead participants to attain loyalty towards the virtual community.

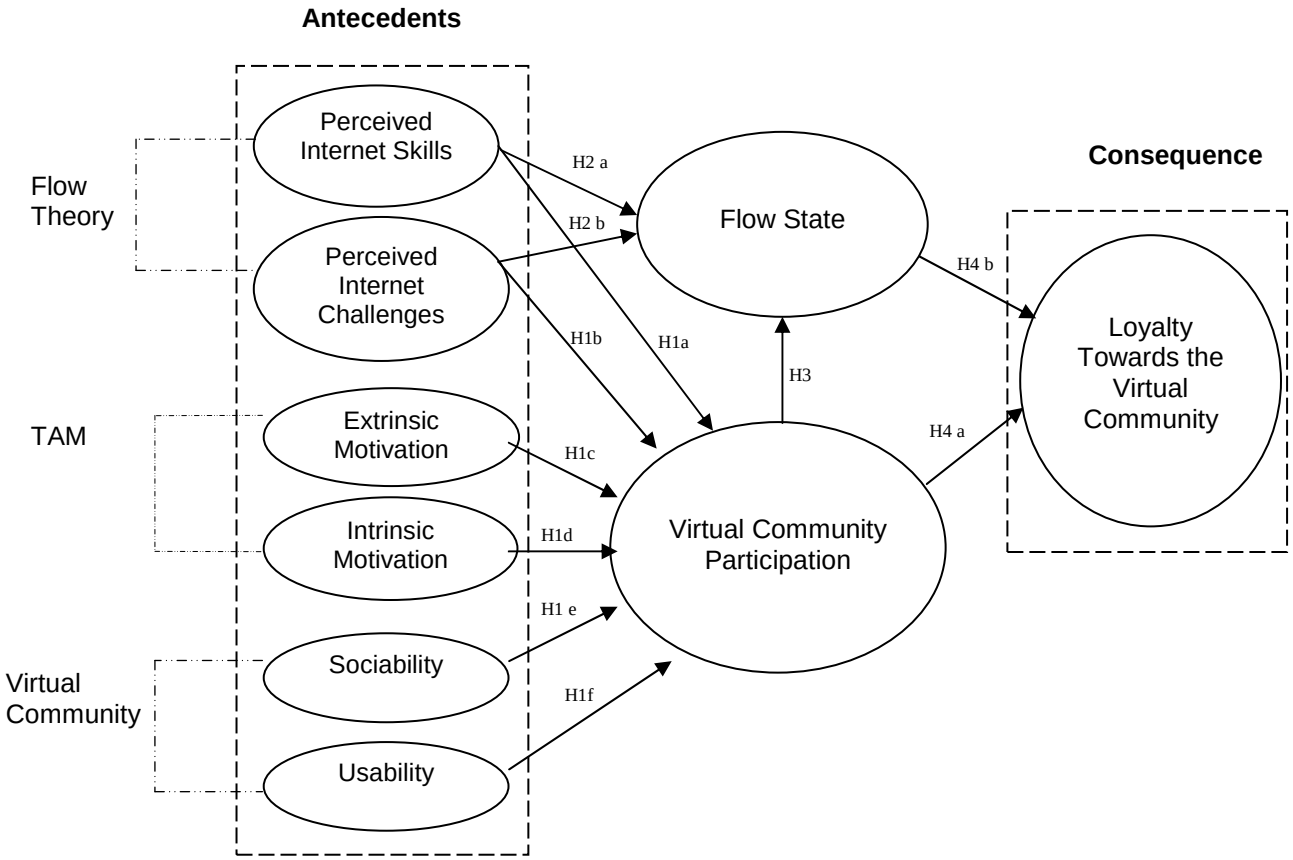

Figure 3. The Proposed Model of Antecedents and Consequences of Virtual Community Participation with the Mediating Role of Flow.

Effect of Perceived Internet Skills and Challenges on Virtual Community Participation

Users participate in a virtual community with a clear goal and use Internet skills to complete a particular task. Online activity includes leisurely browsing a site for entertainment, playing games, interacting socially by chatting and developing personal contacts, gathering product information through online searches or member acquaintances, purchasing online, and trafficking feedback. These tasks pose challenges and require Internet skills for accomplishment.

According to Balasubramanian and Mahajan (2001), community participants require Internet skills to solve problems and to match the expertise of their peers. Internet skills are required not only for tackling challenges in the operation of a technology, but also for carrying out discussion and developing online relationships. These Internet skills allow the consumer to respond frequently and instantaneously. These skills also enable participants to exchange accurate and helpful information, thereby building confidence in their abilities (Ridings et al., 2002). Therefore, we predict that an individual's computer Internet skills will motivate virtual community participation.

Novak et al. (2000) observed higher Internet challenges are needed to induce increased focus and attention in an online activity. A virtual community offers opportunities and Internet challenges to attract a participant (Wang & Fesenmaire, 2002), and allows the participant to encounter and solve virtual challenges (Balasubramanian & Mahajan, 2001). This results in developing higher attention focus and needs satisfaction, which imposes a positive impact on consumer motivation to participate in a virtual community activity.

Based on the previous arguments, we hypothesize that the Internet skills and challenges associated with a virtual community will increase consumer participation in the virtual community. Therefore, the following hypotheses are proposed.

H1a: Consumer perceived Internet skills increase virtual community participation.

H1b: Consumer perceived Internet challenges increase virtual community participation.

Effect of Extrinsic Motivation on Virtual Community Participation

Extrinsic motivation is considered an important element in influencing the behavior of an individual to perform a virtual activity by escalating the ideals of the outcome (Teo, 2001). Perceived usefulness is regarded as a form of extrinsic motivation (Atkinson & Kydd, 1997; Davis, 1986; Heijden, 2003; Teo, 2001). Studies using TAM have found that perceived usefulness has a strong relationship with computer usage (Davis, 1986; Heijden, 2003; Teo, 2001). The present motivation to use an online technology and its future perception were observed to be highly correlated with the perceived usefulness of a system (Adams, Nelson, & Todd, 1992; Davis, 1986; Davis, 1989; Igbaria, Schiffman, & Wieckowshi, 1994). Monsuwe et al. (2004) explained a consumer's perception of usefulness enhances the consumer's attitude toward online shopping. Koh and Kim (2003) identified extrinsic motivation as an important antecedent of virtual community participation and indicated the expected need fulfillment (usefulness) in a virtual community as an important motivation factor beyond virtual community participation.

People participate in virtual communities because of advantages such as convenience, greater access to information, more product knowledge, and emotional support (Chen et al., 2000). This perceived usefulness of a virtual community is expected

to motivate higher consumer participation in a virtual community. Therefore, this study anticipates that extrinsic motivation will affect virtual community participation and proposes the following hypothesis.

H1c: Consumer extrinsic motivation increases virtual community participation.

Effect of Intrinsic Motivation on Virtual Community Participation

Intrinsic motivation has been suggested to have a great deal of influence on an individual's intention to participate in an online activity (Atkinson & Kydd, 1997; Teo, 2001; Davis, 1986). Individuals are motivated to participate in a virtual community to garner intrinsic rewards in the form of enjoyment derived from activities such as chatting, searches, discussions, and feedback. The enjoyment gained from virtual community participation has been shown to enhance a member's desire to participate (Bagozzi & Dholakia, 2002; Dholakia, Bagozzi, & Pearo, 2004). Enjoyment in a virtual community refers to "enjoyment or playfulness derived from the community's content and interaction with other members" (Koh & Kim, 2003, p. 79).

TAM has identified perceived enjoyment as an important form of intrinsic motivation. It is evident that individuals adopt online technology to experience some form of fun and excitement (Davis et al., 1992). Perceived enjoyment was also found to be a strong predictor towards online shopping (Childers, Carr, Peck, & Carson, 2001). Enjoyment gained from online participation enhances the member's aspiration to participate further in a virtual community (Wang et al., 2002).

Based on the above observations, we believe that the concept of fun and enjoyment are strongly associated with a virtual community activity and propose the following hypothesis.

H1d: Consumer intrinsic motivation increases virtual community participation.

Effect of Sociability and Usability on Virtual Community Participation

Preece (2001) identified sociability and usability as the major determinants for the success of a virtual community. The framework of sociability (i.e., purpose, people, policies) and usability (i.e., dialog and social interaction support, information design, navigation, access) provides a basis for identifying characteristics and measures the success or failure of a virtual community (Preece & Kichmer, 2003).

According to Preece and Krichmar (2003), systematic development of sociability and usability issues in a virtual community contributes towards its success. The development of usable system will help the participant to use and navigate the interface with ease and minimal effort. Development of a sociable system will allow participants to understand the mission of a virtual community and will fascinate participants interested in a particular topic. Williams and Cothrel (2000), in their article "Four Smart Ways to Run Online Communities," indicated technology, social policies, and practices to be vital in the development, management, and customer retention of a virtual community. Hence, it is perceived that the sociability and usability functions of a virtual community will attract more consumers.

Based on the above discussion, we can posit that the installation of sociability and usability determinants in a virtual community will contribute to attracting and retaining a larger consumer base. Based on this assumption, the following hypotheses are proposed.

H1e: Functions of sociability in a virtual community increase consumer participation.

H1f: Functions of usability in a virtual community increase consumer participation.

Effect of Perceived Internet Skills and Challenges on Flow State

Hoffman and Novak (1996) described flow state as a cognitive experience determined by a high level of Internet skills and challenges. Csikszentmihalyi (1998) suggested that when consumers are engaged in a web activity that stimulates their Internet skills, a flow state will be initiated. Another study concentrating on professional employees in various organizations concluded an individual's Internet skills formulate control over the activity leading to a flow state (Ghani & Deshpande, 1994). A virtual community provides the necessary opportunity for an individual to use his/her Internet skills. Therefore, we expect that an individual's Internet skills during participation in a virtual community will enhance the flow state experience.

Two separate studies found the Internet challenges related to an activity, predicted the occurrence of flow state (Ghani et al., 1991; Ghani & Deshpande, 1994). The stimulation of Internet challenges during virtual community activities, such as discussion boards, chats, and forums, is mentioned by the previous authors as an apparatus for attaining flow state (Hoffman & Novak, 2000). In this study, therefore, we expect that challenges in a virtual community will contribute to the occurrence of flow state**.**

These observations provide empirical support for our following hypotheses independently relating Internet skills and challenges to the attainment of flow state.

H2a: Consumer perception of Internet skills increases flow state.

H2b: Consumer perception of Internet challenges increases flow state.

Effect of Virtual Community Participation on Flow State

Use of the World Wide Web has been viewed as an activity facilitating the occurrence of the flow state (Chen, Wigand, & Nilan, 1999; Hoffman & Novak, 1996,

2000; Webster et al., 1993). Members of a virtual community attain flow state by experiencing control, attention focus, and cognitive enjoyment while participating in online activities (Hoffman & Novak, 2000). Members control interaction with the website by means of system response, feedback, or choices among alternatives. While indulged in online chatting, e-shoppers filter out irrelevant or distracting stimuli from the environment, thereby achieving attention focus (Webster et al., 1993). A virtual community provides inquisitive novel options for interaction, letting users achieve intrinsic interest in the community fostered by cognitive enjoyment. These experiences are all regarded as dimensions of a flow state and, therefore, it is evident that a virtual community provides the necessary platform for a flow state experience.

The following two excerpts from a previous study reflect flow state experiences by participants involved in virtual community activities (Chen et al., 1999):

"I was in a heated discussion on a chat network for the better part of two hours. I cannot remember what the subject was about, but all I knew was I was totally blind to the world."

"Whether it is reading news groups or doing a search for a particular thing I tend to concentrate and "lose myself."

Based on the previous literature, it is inferred that virtual community, which includes features like chat rooms, bulletin boards, and email forums, have emerged as a platform for consumer interaction on the web. Increased participation in a virtual community will engross the consumer in an online activity, which leads to flow state. Based on the above reasoning, the following hypothesis is proposed.

H3: Consumer participation in a virtual community increases flow state.

Effect of Virtual Community Participation and Flow State on Loyalty Towards the Virtual Community

Online virtual communities are established to serve potential consumer needs for communication, information, and entertainment (Wang et al., 2002). It has been observed that the more personal relationships are established within a virtual community, the more participation in the virtual community increases (Kim et al., 2004). An effectively managed virtual community develops two-way interaction and increases the customer satisfaction level, paving the way for a strong customer foundation with an intention to revisit (Kim et al., 2004). (Hagel & Armstrong, 1997). Intention to revisit and higher usage of the virtual community activities will gradually convert to loyalty towards the virtual community (Koh & Kim, 2003).

Therefore, we assert that virtual community participation level will influence loyalty towards the virtual community and propose following hypothesis.

H4a: Virtual community participation increases consumer loyalty towards the virtual community.

Flow state experience is an important tool in developing customer loyalty towards online shopping websites and hypermedia (Hoffman & Novak, 1996). Kaoufaris (2002) indicated the importance of flow in retaining customer loyalty. He further clarified that all the dimensions of flow, such as enjoyment, concentration, control, mergence, and loss of self-consciousness, are positively related to intention to return, which is a precursor of loyalty. While empirical studies have not documented the relationship between flow state and loyalty, most flow dimensions have been found to be related to satisfaction, intention

to revisit, frequent usage, etc, which have been proven to be antecedents of loyalty. For example, the intrinsic enjoyment acquired in an online activity has been shown to positively impact the length and frequency of online usage (Koufaris, 2002). Concentration, as a measure of flow, has also been identified as an important factor affecting a consumer's overall experience on the web (Novak et al., 2000) and has been shown to influence intention to revisit (Kaufaris, 2002). Control, which is related to an individual's perception of information accessibility and the opportunities required for performing a specific behavior, has also been suggested to increase consumer repeat usage or frequent visit (Monsuwe et al., 2004).

Mergence of action is defined as "one-pointedness of mind: feelings of total involvement that individuals stop being aware of themselves as separate from the action performed" (Csikszentmihalyi, 1990, p. 53) and is witnessed only if consumers are satisfied with the content of the website, which will lead to frequent visits. Loss of self-consciousness, accompanied by a feeling of union with the environment, is achieved only when consumers are totally lost in an online activity, which leads to increased satisfaction and frequent visits (Csikszentmihalyi, 1990). Overall, customers who experience flow while shopping online are believed to have higher intentions of returning to the site in the future, resulting in the development of loyalty (Chen et al., 1999).

Based on the above discussion, we postulate that the more participants experience flow state, the higher the loyalty towards the virtual community. Therefore, we propose the following hypothesis.

H4b: Flow state in virtual community increases consumer loyalty towards the virtual community.

CHAPTER III

METHOD

This chapter describes the methods, research design, and procedures undertaken to empirically test the proposed hypotheses. First, the survey instrument design and pre-test procedures are discussed, followed by the data collection procedures and the description of the sample characteristics. Finally the statistical procedure used to analyze the data is reported.

Survey Instrument Design

After approval of the study by the Oklahoma State University Institutional Review Board, data were collected through a structured questionnaire survey. The survey included a cover letter explaining the purpose of the research, and the survey instrument consisted of seven sections. Respondents for the survey were screened to determine if they were currently participating in a consumer-based virtual community hosted by a retailer or national brand company. The names of virtual communities, such as ebay.com, amazon.com, and Moosejaw.com, were given as a hint to the respondents for the relevancy of a virtual community. If the question was answered 'Yes,' the respondents were asked to continue the survey. If the response was 'No,' individuals were asked to discontinue the survey.

The first section of the survey measured respondents' virtual community participation behavior. Respondents were asked to specify the virtual community in which they most frequently participated. Respondents were then asked to answer the remaining questions based on this specific virtual community. Respondents were asked to report the membership duration in this virtual community. Survey questions also asked the degree of participation in various online community formats such as website bulletin board, usenet news groups, real time online chat systems, web-based chat rooms, multi player virtual games, and mud games. To measure the degree of virtual community participation, time spent on specific virtual community activities were asked to be reported according to the following scale: 1- almost everyday, 2- once or twice a week, 3- three or four times a week, 4- once a month, 5- less then once a month.

The second section measured the antecedents of virtual community participation using a 5-point response Likert scale (1- strongly disagree to 5- strongly agree). *Internet skills, Internet challenges, intrinsic motivation, extrinsic motivation, sociability, and usability* were measured as antecedents of virtual community participation. Internet skills and challenges were measured by adapting the scale from Guo (2003). This scale consisted of ten questions: five for measuring skills and five for measuring challenges. The original items tested Internet skills and challenges in a website. However, in this study, the structure of the questions was changed by replacing the word 'web' with 'virtual community' to test Internet skills and challenges in a virtual community setting. The *extrinsic and intrinsic motivation variables* were measured by adapting a scale from Heijden (2003). This scale consisted of six questions: three for measuring extrinsic motivation and three for measuring intrinsic motivation. Extrinsic and intrinsic

motivations were tested by replacing the words ‘site’ and ‘portal’ in the original questionnaire with ‘virtual community’ in the survey questionnaire. The measurement of *usability and sociability* items was adopted directly from Kim, Park, and Jin (2007). These measures were based on the conceptualization study of Preece (2001). The scale consisted of twenty-six items for measuring both the sociability (thirteen items) and usability (thirteen items) variables.

The third section tested the presence of *flow state* during virtual community participation. Flow state was measured by the Flow State Scale (FSS) used in Hoffman and Novak’s (2000) study. FSS defines the flow state experience and uses three questions to measure the consumer’s flow state occurrence. All items were tested using a 5-point response Likert scale (1- strongly disagree to 5- strongly agree). These flow state measurement items have been accepted widely for studying the flow state experience in online shopping environments. In this study, FSS was modified to fit the virtual community context by replacing the word ‘Internet’ with ‘virtual community.’

The fourth section measured *loyalty* towards the virtual community using a seven-item scale adapted from Srinivasan et al. (2002). The items tested loyalty using a 5-point response Likert scale (1- strongly disagree to 5- strongly agree). The phrasing of the original questions was changed from ‘website’ to ‘virtual community’ to measure loyalty toward a virtual community. Table 1 summarizes the measurement items and their sources.

The last section of the questionnaire measured the demographics of each respondent: gender, age, year, major college, and income.

TABLE 1

MEASUREMENT OF THE CONSTRUCTS IN THE PROPOSED MODEL

Constructs	Items retained in the survey	Items	Source
Degree of Online Community Participation	How much time do you spend chatting online, contributing to bulletin boards, emailing, etc. in this virtual community?(R) (1. Almost everyday 2. Once or twice a week 3. Three or four times a week 4. Once a month 5. Less than once a month)	1	Developed by researcher
Perceived Internet Skills	1. I knew how the community site works. 2. I was confused by the online community's website design.(R) 3. I understood the information on the community website well. 4. I had enough skills to do what I intended to do in the virtual community. 5. I was competent to carry out the online community activities.	5	Guo (2004)
Perceived Internet Challenges	1. Participating in a virtual community was a challenge for me. 2. Using this community website provided a good test of my skills to face challenges. 3. It was hard to do what I wanted to do in this community site. 4. I found it was hard for me to make a decision based on the information on the community site. 5. Overall, I felt participating in this community site was pretty easy. (R)	5	Guo (2004)
Extrinsic Motivation (Measured by perceived usefulness)	1. I find this community website useful. 2. The information on this community site is interesting to me. 3. I find this virtual community adds value in my life.	3	Heijden (2003)
Intrinsic Motivation (Measured by perceived enjoyment)	1. I find participating in this virtual community enjoyable. 2. I participate in this virtual community for pleasure. 3. Browsing in this community website is an agreeable way of passing time.	3	Heijden (2003)
Sociability	1. Messages or information that is relevant to the current discussion topics are posted and exchanged. 2. Many community members participate or are involved in the topics being discussed. 3. Community members actively interact with each other. 4. The posted information or messages are useful. 5. Many relevant topics are discussed. 6. There are many members in this virtual community. 7. Members in this community have knowledge/experience in regards to the discussion topic. 8. Members of this community and I share similar characteristics (e.g., age, gender, education, etc.).	13	Kim, Park, and Jin (2007)

	9. This virtual community requires members to be registered. 10. This virtual community has policies to deter uncivil behavior. 11. The policies are effective in deterring uncivil behavior. 12. The policies help foster good relationships among community members. 13. The policies help foster trusting relationships among community members.		
Usability	1. Reading or sending messages in this virtual community is simple. 2. Learning to read or send messages in this virtual community was easy. 3. I am satisfied with the dialogue in this virtual community. 4. I am satisfied with the social support in this virtual community. 5. I remember content of the dialogue that goes on in this virtual community. 6. It is easy to find information that is useful to me. 7. It is easy to make errors when accessing information. 8. It does not take a long time to navigate through the website to find something. 9. I can usually get what I want on this website in a reasonable time. 10. I am satisfied with the usability and navigation functions of the website. 11. I can easily access required software components for the virtual community. 12. I frequently incur problems when downloading and running required software for the virtual community. 13. The time it takes to download and run required software for the virtual community is reasonable.	13	Kim, Park, and Jin (2007)
Flow State	*The word "flow" is used to describe a state of mind sometimes experienced by people who are deeply involved in some activity. One example of flow is the case where a professional athlete is playing exceptionally well and achieves a state of mind where nothing else matters but the game; he or she is completely and totally immersed in it. The experience is not exclusive to athletics. Many people report this state of mind when playing games, engaging in hobbies, or working. Activities that lead to flow completely captivate a person for some period of time. When one is in flow, time may seem to stand still, and nothing else seems to matter. Flow may not last for a long time on any particular occasion, but it may come and go over time. Flow has been described as an intrinsically enjoyable experience.* 1. I have experienced flow in this virtual community's activities. 2. I experience flow every time I participate in the virtual community. 3. Most of the time when I use the virtual community, I feel that I am in flow.	3	Novak, Hoffman, & Yung (2000)

Loyalty Toward the Virtual Community	1. I seldom consider switching to another virtual community. 2. As long as the present service continues, I doubt that I will switch to a different community. 3. When I need to participate in a virtual community, this virtual community is my first choice. 4. I like using this virtual community. 5. To me, this virtual community is the best one to participate in. 6. I believe that this is my favorite virtual community. 7. I try to participate in this virtual community whenever I feel like it.	7	Srinivasan, Anderson, & Ponnavolu (2002)

R: Reversely coded item

Data Collection

Data for this study were collected using the convenience sampling method. College students were chosen as the respondents because previous literature cites that nearly 85% of U.S. college students participate in some form of virtual community activity (Crespo, 2007). The data were collected from students who were enrolled at a southwestern U.S. university majoring in fields of study such as merchandising, marketing, design, science, engineering, arts, and education.

Permission to administer the survey was given by the course instructor. Questionnaires were distributed during regularly scheduled class hours, and a brief description of the survey was provided by researchers. Students who had previous experience in a virtual community hosted by a company were asked to complete the questionnaire. In total, 450 questionnaires were distributed to potential respondents. Of the 350 completed questionnaires received, twenty-eight were discarded for incomplete and inconsistent responses. Responses from another 181 questionnaires were not used because the respondents indicated participation in member-initiated virtual communities,

even though oral and written instructions were given asking for students with sponsor-initiated virtual community experience. The remaining 141 questionnaires (40.3%) yielded usable data for our analysis. As a token of appreciation for participating in the survey, candies were distributed to all students in the classroom. Table 2 presents the detailed demographics of the respondents in this study.

Table 2

DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

	Demographic Characteristics	**Frequency**	**%**
Gender	Female	85	60.3
	Male	56	39.7
Age	18 – 20	67	47.5
	21 – 25	69	48.9
	26 and Above	5	3.6
Year	Freshman	19	13.5
	Sophomore	29	20.6
	Junior	67	47.5
	Senior	23	16.3
	Other	3	2.1
Major college	Agricultural Sciences and Natural Resources	46	32.6
	Human Environmental Sciences	27	19.1
	Arts and Sciences	31	22.0
	School of Business	31	22.0
	Other	6	4.3
Monthly income range	Less than $1,000	114	80.9
	$1,001 to $1,999	22	15.6
	$2,000 to $2,999	4	2.8
	Above $3,000	1	0.7

The survey data indicated that among the organization-sponsored virtual communities, 71.6% of the respondents participated in eBay.com, 17.7% participated in amazon.com, and 1.4% participated in barnesandnoble.com. Table 3 summarizes respondents' virtual community participation in terms of the most frequently visited virtual community.

TABLE 3

RESPONDENTS' VIRTUAL COMMUNITY PARTICIPATION

Virtual Communities	**Frequency**	**%**
eBay.com	101	71.6
amazon.com	26	17.7
barnesandnoble.com	2	1.4
rivalsfanshop.com	1	0.7
nordstrom.com	1	0.7
nintendo.com	1	0.7
worldofwarcraft.com	1	0.7
gunboards.com	1	0.7
saksfifthavenue.com	1	0.7
kraftfoods.com	2	1.4
expedia.com	1	0.7
360.yahoo.com	1	0.7
newegg.com	1	0.7
thebreedersconnection.com	1	0.7
Total	141	100

Virtual community participation behaviors of the respondents are shown in Table 4. Of the respondents, 27% had a membership in a specified virtual community of two to three years, while only 5.7% of the respondents had less than one year of virtual community membership.

Table 4 also shows the degree of participation in a virtual community. The largest percentage of respondents, 39%, participated in a specified virtual community almost daily, while the number of individuals with a frequency of participation less than once a

month was also high (22.7%). These numbers indicate that respondent behavior varied considerably with virtual community participation and that respondents had sufficient experience to participate in the survey.

TABLE 4

RESPONDENTS' DEGREE OF VIRTUAL COMMUNITY PARTICIPATION

		Frequency	**%**
The number of years of membership in the specific virtual community	5 months – Less than 1 Year	8	5.7
	1 Year – Less than 2 Years	37	26.2
	2 Years – Less than 3 Years	38	27.0
	3 Years – Less than 4 Years	26	18.4
	4 Years – Less than 5 Years	10	7.1
	5 Years – Less than 8 Years	22	15.6
Total		141	100
The degree of participation in the specified virtual community	Almost every day	55	39.0
	Once or twice a week	18	12.8
	Three or four times a week	13	9.2
	Once a month	23	16.3
	Less than once a month	32	22.7
Total		141	100

Table 5 shows the frequency of respondent participation in different forms of virtual community activities. This construct was measured using a 5-point response Likert scale (1- never, 2- rarely, 3- sometimes, 4- frequently and 5- very frequently). Respondents showed a strong interest in threaded discussions such as bulletin boards and online chat systems. Respondents were also occasionally involved in social networking through chat rooms and in entertainment through virtual games.

TABLE 5

FREQUENCY OF USING EACH OF THE VIRTUAL COMMUNITY FORMATS

	Minimum	Maximum	Mean	Std. Deviation
Website bulletin boards	1	5	2.59	1.22
Usenet news groups	1	5	1.76	0.99
Real-time online chat systems	1	5	1.85	1.24
Web-based chat rooms	1	5	1.58	0.98
Multi-player virtual games	1	5	1.84	1.19
Multi-user domains or Dungeon (MUD games)	1	4	1.15	0.50

Data Analysis

The data collected from the survey responses were analyzed using Statistical Package for the Social Sciences (SPSS). The data were analyzed using descriptive statistics, frequency test, reliability, and multiple regression analysis techniques. Descriptive statistics were performed on selected variables to obtain range, frequency, and mean of the data. Reliability tests (in terms of Cronbach alpha value) were performed for all independent and dependent variables. Multiple regression analysis was used to examine the statistical significance of the independent variables, to determine variance in the dependent variables as explained by the model, and to examine the contribution of each independent variable on the prediction of the dependent variable.

CHAPTER IV

FINDINGS

This chapter presents the findings resulting from the analysis of data collected in the study. We will first describe the reliability of the variables and then present the overall results from multiple linear regression models.

Reliability Test

The reliability of the study was measured by using the Reliability Analysis Test of SPSS 14.0. Cronbach alpha is the most widely used measure to test reliability. Therefore, this study used the Cronbach alpha measure to evaluate the reliability of the variables. It is generally agreed that the value of Cronbach alpha should not be lower than 0.60 (Robinson, Shaver, & Wrightsman, 1999). The higher the value of Cronbach alpha is, the higher the internal consistency of the factor (Robinson et al., 1999). Results of the reliability analysis, along with the mean and standard deviation of the variables, are shown in Table 6. From the table it was observed that the variables Internet skills and challenges have an alpha value of 0.83 and 0.76, respectively, indicating good reliability. Extrinsic motivation gave an acceptable alpha value of 0.63, while intrinsic motivation gave a good reliability with a 0.81 alpha value. The variables sociability and usability, with alpha values of 0.81 and 0.75, respectively, show good reliability. The flow variable,

with an alpha value of 0.83, and loyalty, with an alpha value of 0.86, represent excellent reliability. These results confirmed that all variables measured in this study were internally consistent, indicating good reliability.

TABLE 6

RELIABILITY OF THE MEASURES

Items	**Cronbach Alpha**	**Number of Items**	**Mean**	**Std. Deviation**
Internet skills	0.83	5	3.98	0.59
Internet challenges	0.76	5	2.04	0.59
Extrinsic motivation	0.63	3	3.54	0.64
Intrinsic motivation	0.81	3	3.84	0.77
Sociability	0.81	13	3.58	0.54
Usability	0.75	13	3.86	0.55
Flow	0.83	3	2.77	0.89
Loyalty	0.86	7	3.68	0.60

Hypotheses Testing

This study employed multiple regression analysis to test the hypotheses. Using the 'compute' function available on SPSS 14.0, the items used to measure each independent variable were averaged to form a single variable, which was then used in multiple regression analysis. For example, the five items used for testing the independent variable 'skills' were averaged to give a single variable, which was then used in multiple regression analysis.

Antecedents of virtual community participation

Hypotheses H1a through H1f predicted that antecedents, such as Internet skills, challenges, extrinsic motivation, intrinsic motivation, sociability, and usability, are positively related with virtual community participation.

The results of multiple regression analysis indicate that perceived Internet skills (β= -0.22, p= 0.12) and Internet challenges (β= -0.03, p= 0.82) do not have significant relationships with the dependent variable, virtual community participation. These results are contradictory to the findings of Balasubramanian and Mahajan (2001) who observed that community participants must have Internet skills to solve problems and to match the expertise of peers in online activities. These results are also conflicting with the conceptual findings of Novak et al. (2000) who proposed that higher challenges induce increased focus and attention in a virtual community. Based on the above results, hypotheses H1a and H1b were rejected. All results of multiple regression analysis are presented in Table 7.

Regression analysis indicates no significant positive relationship between a consumer's extrinsic motivation and virtual community participation (β= 0.02, p= 0.82).

This result does not support the findings of Koh and Kim (2003), which identified perceived usefulness as an important antecedent of virtual community participation. Based on the above analysis, hypothesis H1c was rejected.

Regression analysis shows a positive relationship between intrinsic motivation and virtual community participation ($\beta = 0.28$, $p = 0.01$); therefore, hypothesis H1d was accepted. This result is consistent with the findings of Teo (2001) who indicated that intrinsic motivation has a significant positive relationship with messaging, browsing, and downloading activities in the online media.

Regression analysis shows that the antecedent sociability does not have a significant influence on virtual community participation ($\beta = -0.01$, $p = 0.95$). This result is inconsistent with the findings of Preece (2001), who indicated sociability as a major determining factor influencing virtual community participation. Hence, based on the above analysis, hypothesis H1e was rejected.

Statistical analysis showed the determinant usability to have a significant positive influence on virtual community participation ($\beta = 0.22$, $p = 0.04$); therefore, hypothesis H1f was accepted. This result is similar to the findings of Preece (2001), who identified usability as a major determining factor in the success of a virtual community. The result further substantiates the findings of Preece and Krichmar (2003), who observed usability as a crucial component in attracting participants to virtual communities.

TABLE 7

IMPACT OF ANTECEDENTS ON VIRTUAL COMMUNITY PARTICIPATION:

REGRESSION ANALYSIS

Independent Variable	**Unstandardized Coefficient B**	**Standardized Coefficient Beta**	**T value**	**Sig.**
Internet Skills	-0.58	-0.22	-1.58	0.12
Internet Challenges	-0.07	-0.03	-0.23	0.82
Extrinsic Motivation	0.07	0.02	0.23	0.82
Intrinsic Motivation	0.58	0.28	2.69	0.01**
Sociability	-0.02	-0.01	-0.06	0.95
Usability	0.89	0.22	2.07	0.04*

$R=0\ .33$, $R^2=0.11$, $F = 2.81$ ($p = 0.01$)
*p<0.05; **p<0.01

Antecedents of Flow State

Table 8 shows the results of regression analysis elaborating the effect of perceived Internet skills and challenges on the flow state. Both Internet skills (β= 0.00, p= 0.98) and Internet challenges (β= 0.14, p= 0.23) had no significant influence on the flow state. These results are consistent with the findings of Skadberg and Kimmel (2004), who reported that neither Internet skills nor challenges significantly influence the flow state, but this study's results contradict the findings of Ghani et al. (1991), Novak et al. (2000), and Koufaris (2002), who all observed a positive influence of both Internet skills and challenges on the flow state. The mixed results obtained in this study suggest that the relationship between Internet challenges and flow state, and between Internet skills and flow state are more complex than was previously perceived. However, a balance between

Internet skills and challenges was demonstrated to have a positive effect on flow state (Csikszentmihalyi, 1990). Therefore, hypotheses 2a and 2b were rejected.

TABLE 8

IMPACT OF INTERNET SKILLS AND CHALLENGES ON FLOW STATE:

REGRESSION ANALYSIS

Independent Variable	**Unstandardized Coefficient B**	**Standardized Coefficient Beta**	**t value**	**Sig.**
Internet Skills	-0.01	-0.00	-0.03	0.98
Internet Challenges	0.20	0.14	1.20	0.23

$R= 0.14$, $R^2 =0.02$, $F = 1.33$ ($p = 0.27$)

Effect of Virtual Community Participation on Flow State

Table 9 reports the effect of virtual community participation in a website hosted by a company on flow state. Regression analysis indicates a significant positive relationship between virtual community participation and flow state ($\beta= 0.25$, $p= 0.00$), which supports hypothesis H3. This finding is consistent with the conceptual study of Hoffman and Novak (2000), who believed that the World Wide Web facilitates the occurrence of flow state experience. Our finding is also consistent with the theoretical study of Webster et al. (1993) and Chen et al. (1999) who conceptually stated that participants attain flow state while using activities such as chat rooms and discussion boards.

TABLE 9

IMPACT OF VIRTUAL COMMUNITY PARTICIPATION ON FLOW STATE:

REGRESSION ANALYSIS

Independent Variable	**Unstandardized Coefficient B**	**Standardized Coefficient Beta**	**t value**	**Sig.**
Virtual Community Participation	0.14	0.25	3.07	0.001***

$R= 0.25$, $R^2 =0.06$, $F = 9.40$ ($p= 0.001$)
***$p<0.001$

Effect of Virtual Community Participation and Flow State on Loyalty Towards the Virtual Community

Table 10 presents the effect of virtual community participation on loyalty towards the virtual community. Multiple regression analysis results indicated that virtual community participation level does not have a significant impact on developing loyalty towards the virtual community ($\beta= 0.04$, $p= 0.67$). Therefore, hypothesis 4a was rejected. This result is inconsistent with the findings of Srinivasan et al. (2002) who empirically found that virtual community participation increases loyalty.

Flow state occurrence was found to be significant in achieving loyalty toward the virtual community ($\beta= 0.17$, $p= 0.05$), which supported hypothesis 4b. This finding supports the conceptual studies of Hoffman and Novak (1996) and Kaoufaris (2002) who indicated that flow state experience is an important tool in developing customer loyalty towards online shopping websites and hypermedia. Figure 4 summarizes the multiple regression analysis results.

TABLE 10.

IMPACT OF VIRTUAL COMMUNITY PARTICIPATION AND FLOW STATE ON LOYALTY: REGRESSION ANALYSIS

Independent Variable	**Unstandardized Coefficient B**	**Standardized Coefficient Beta**	**t value**	**Sig.**
Virtual Community Participation	0.01	0.04	0.43	0.67
Flow	0.12	0.17	1.95	0.05*

$R = 0.18$, $R^2 = 0.33$, $F = 2.35$ ($p = 0.09$)
*$p < 0.05$

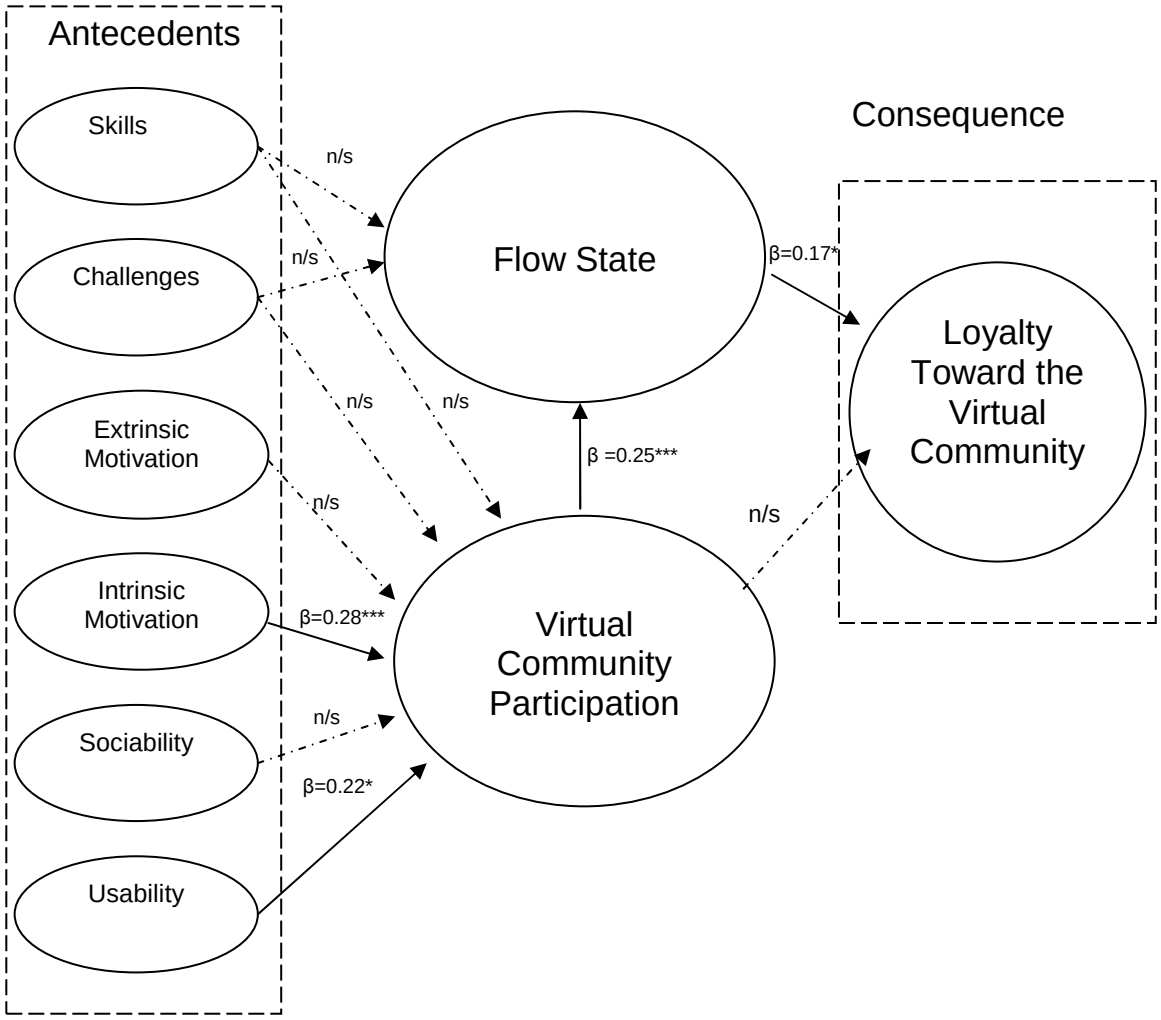

Figure 4. Summary of the multiple regression analyses results.
n/s: not significant

CHAPTER V

DISCUSSION AND IMPLICATIONS

The present study was developed to understand the antecedents and outcomes of consumer participation in virtual community activities. Specifically, this study explored (1) antecedents of consumer participation in virtual communities hosted by companies, (2) whether consumers experience flow state while participating in virtual communities, and (3) outcomes of consumer participation in virtual communities. The results of this study indicated that among the six antecedents proposed, intrinsic motivation and usability have significant influence on virtual community participation, while Internet skills, Internet challenges, extrinsic motivation, and sociability do not have significant influence on virtual community participation. The relationship between the Internet skills and challenges and flow state was also found to be not significant. The conceptual idea of virtual community participation being an important tool for achieving flow state was highly significant. In addition, even though virtual community participation did not have a significant influence on loyalty, flow state was observed to have a significant influence in developing loyalty towards the virtual community. This chapter discusses (1) the findings of the analysis, (2) academic and managerial implications of the study, and (3) limitations and suggestions for future research.

Discussion of Findings

It is hypothesized that Virtual community participation will be influenced by participants' perceived Internet skills and challenges. This relationship was not supported by our findings. It was interpreted that respondents of the present study (i.e., college students) possessed sufficient Internet skills to participate in online activities and to tackle the challenges encountered during the online activities. It is possible that respondents did not consider either Internet skills or challenges as an important variable in motivating their participation in online communities. The results are not surprising given that our respondents were young college students with sufficient experience and skills in using a computer and in using multiple online activities. Under such circumstances, respondents would not consider Internet challenges as a hurdle to participating in online activities.

The Technology Acceptance Model (TAM) identifies extrinsic motivation and intrinsic motivation as the two major motivational factors influencing online usage. By adapting this idea, we hypothesized that extrinsic motivation (perceived usefulness) and intrinsic motivation (perceived enjoyment) would have an influence on virtual community participation. It was surprising to note that the postulation of extrinsic motivation influencing virtual community participation was rejected. This result was inconsistent with findings of Davis (1989) and Teo et al. (1999), who reported that extrinsic motivation is an important factor influencing consumers to participate in online activities. Our choice of respondent group, college students, may have influenced the results. Our findings are in accordance with the observations of Hsu and Lu (2004), who reported perceived usefulness to have a significant effect only on "work-purpose users."

In contrast, intrinsic motivation had a significant influence on company hosted virtual community participation, thus supporting the findings of Davis (1989), Hoffman and Novak (1996), and Teo et al. (1999). Our results are also consistent with the empirical study of Hsu and Lu (2004), who suggested that perceived enjoyment plays a significant role in explaining a participant's behavior in an online community. Perceived enjoyment is the main motivational factor to participate in virtual community activities, and our findings suggests that college students participate in virtual community activities for attaining intrinsic enjoyment. From the results of extrinsic and intrinsic motivation on virtual community participation, it may be reasoned that the respondents of this study participate in online activity for enjoyment and not for achieving specific goals or to improve performances.

The results indicated that the antecedent sociability does not have a significant influence on virtual community participation, which contradicts the findings of Preece (2001). Dholakia et al. (2004) reported that small group-based virtual communities have higher sociability functions in comparison to large group-based virtual communities. Large group community members were observed to be more geographically and socially dispersed and focused on the functional benefits of the community, such as information acquisition and problem solving (Dholakia et al., 2004; Porter, 2004). This may explain the insignificant influence of sociability on virtual community participation as the majority of our respondents (71.6%) participated in eBay, which is a large group-based virtual community.

On the contrary, usability had a positive influence on consumer participation in a virtual community, which supports the observations made by Preece (2001) and Kim et al. (2007). This finding further justifies usability as an important determinant in motivating consumers to participate in an online community. Thus, usability, which develops experience at the human-computer interface, will attract a large number of participants to company hosted virtual community activities.

It was surprising to observe that Internet skills and challenges did not significantly influence the occurrence of flow state. The results opposed our initial expectations and previous findings (Csikszentmihalyi, 1975; Ghani et al., 1991; Hoffman & Novak, 1996). Csikszentmihalyi (1990) cites the balance between Internet skills and challenges as the most important factor for a flow experience, but testing the balance between Internet skills and challenges may not be an easy task (Finneran & Zhang, 2003). Ellis, Voelkl, and Morris (1994) mentioned that Internet skills and challenges constructs are complex and that testing them individually might not serve as a valid measure of the dimensions. Testing the balance between Internet skills and challenges may warrant further studies.

The present study indicates virtual community participation plays a significant role in increasing the flow state experience. The results are in accordance with previous studies (Chen et al., 1999; Hoffman & Novak, 1996; Webster et al., 1993) where the authors conceptually suggested a positive relationship between virtual community participation and flow state. Hoffman and Novak (2000) also suggested that the hypermedia environment influences the occurrence of flow state. Based on our results, we can conclude that the virtual community plays a significant role in increasing the flow state experience of participants engaged in chat sites and discussion groups.

Results of this study indicate that virtual community participation does not play a significant role in increasing loyalty towards the company hosted virtual community, contradictory to the findings of previous researchers who found virtual community participation as an antecedent to loyalty (Kim et al., 2004; Hagel & Armstrong, 1997; Srinivasan et al., 2002). According to the report of Witfelt (2007), a considerable proportion of the individuals accessing online communities were young people who participated in multiple virtual communities. Our survey did not test the number of online communities visited by respondents. However, since the majority of our respondents were college students in the age group 18-26 years, it is possible that they participated in multiple virtual communities and were not loyal to any single company hosted community.

The analysis of this study's data empirically measured flow state in the virtual community and found a significant influence of flow state on increasing loyalty towards the virtual community. These results are in accordance with previous studies that conceptually stated flow state as an important tool in developing customer loyalty towards online shopping websites and hypermedia (Hoffman & Novak, 1996). Chen et al. (1999) reported that customers experiencing flow state while shopping online considered returning to the website for making purchases. This study further justified previous studies by empirically measuring flow state in a virtual community. The results of the analysis suggest that higher participation in a virtual community will not lead to loyalty, but if participants attain flow state during virtual community participation loyalty towards the virtual community will be developed. Therefore this study considers flow state as the most important factor influencing loyalty.

Academic Implications

The findings from the present study contribute several important concepts to virtual community and flow state studies. First, the proposed model provides an integrative view of the antecedents of virtual community participation. It also shows the relationship between online community participation and flow state. Finally, the model elaborates the outcomes of virtual community participation and flow state to the virtual community.

The framework applied in the present study presents a new theoretical insight into the factors that motivate participants to get involved in a virtual community. The study determined that intrinsic motivation and usability may influence virtual community participation. The study contributes further understanding of the relationship between virtual community participation and flow state. This is a major academic contribution since no previous studies had empirically examined this relationship. The result signifies that increased virtual community participation increases the attainment of flow state by participants, which increases loyalty towards a virtual community.

Managerial Implications

The process of understanding antecedents and consequences of virtual community participation with the mediating influence of flow state will provide a valuable insight for companies involved in hosting virtual communities. Results of this study will help retailers to better understand the process of establishing and managing virtual

communities to attract more participants. The implications of the study for companies are described in the following section.

The results of this study indicate that intrinsic motivation (perceived enjoyment) is one of the main tools in attracting people to participate in virtual communities. Virtual communities can utilize this concept and improve the entertainment features of their sites to attract more participants. For example, companies may develop software to include vivid avatars, which makes the online community more entertaining. This will further stimulate the presence and identity of the individual. Thumb-nail pictures, links to personal home pages, graphical representations, personalized photos, and personalized web page designs are some of other elements that can increase the enjoyment of participation.

This study also found usability to be an important variable in attracting participants to a virtual community. Companies hosting virtual communities must consider usability components to make the community activities more enjoyable and easy to use. Virtual communities that are easy to use will attract more participants and usability will assist in retaining individuals in a particular community. If community members encounter continuous problems with navigation, access, and downloading and are continuously frustrated in their attempts to take part in an online community, they will leave that community. Usability also encourages pleasant interactions in a community, which encourages members to take active roles in the community. Software with high usability supports rapid learning, high skill retention, low error rates, and high productivity (Preece, 2000). Since the company controls the usability function of its virtual community, the company plays a vital role in the success of that community.

One of the key findings in this research is the close relationship between virtual community participation and flow state. The study determined that flow is a desirable state that can occur during virtual community participation. For example, the more time a participant spends in virtual community activities, the more likely he/she is to experience flow state.

In this study, flow state was found to be an important factor in registering loyalty towards the virtual community. Previous studies have reported that stimulation related to loyalty toward community service will result in profit to the virtual community hosting company because "community loyalty may be indirectly or directly linked to loyalty toward the community provider" (Koh & Kim, 2003, p. 160). As the potential benefits of the flow state in virtual community providers are being discussed, we suggest that companies focus on developing flow state features in designing a virtual community; the result may be to gain positive outcomes.

Limitations and Future Studies

The respondents of this study had characteristics that differentiated them from other segments of the general population. The majority of the respondents had previous experience with online communities and had visited online communities frequently. In addition, the respondents surveyed were representative of one university in one state. The results may vary if different states and different demographics are involved. Therefore, we suggest that future research may concentrate on wider demographics for more representative sampling. Additionally, testing the balance between Internet skills and

challenges may help to understand its influence on flow state and virtual community participation.

The present study focused only on commercial virtual communities to understand flow state experience and outcomes. Results of commercial communities might vary from the results of noncommercial communities. Future studies could focus on comparing organization-sponsored virtual communities with member-initiated virtual communities to better understand these two types of virtual communities. And finally, multiple regression analysis used in this study does not allow for testing the causal relationship among the variables. Future studies using structural equation modeling can re-evaluate the findings of this study and provide a greater understanding of the antecedents and consequences of flow state in virtual communities hosted by companies.

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APPENDICES

APPENDIX A

COVER LETTER

COVER LETTER

Title of the study: Antecedents and Consequences of Flow State in Virtual Communities Hosted by Companies

Dear Participants,

Thank you for your participation in this survey. The purpose of the research is to examine your virtual community participation. As a token of our appreciation, we will distribute incentives in the form of candies upon completion of the survey. Survey questionnaire will take approximately 15 minutes to complete and only one survey will be collected from each respondent. If you have any questions concerning the survey, please contact Uthkala Urubail or Dr. Byoungho Jin. If you have questions about the research and your rights as a research volunteer, you may contact Dr. Sue C Jacobs, IRB Chair, 219 Cordell North, Stillwater ,OK 74078, 405-744-1676 or irb@okstate.edu.

Please be assured that your name and information will be confidential. Please be assured that we will NOT distribute any information to third parties. Data will be reported in an aggregate form only. There is absolutely no way that your answers will be attributed to your responses. Your participation is absolutely voluntary. You can choose to stop answering at any time. Your participation is not related to your grade in this class. Thank you once again for participating. There are no known risks associated with this project which are greater than those ordinarily encountered in daily life. Data will be coded in the researcher's computer and the questionnaires will be kept in locked cabinet. Data will be stored approximately for a period of 2 years until the manuscript gets published. Data will be accessed only by the primary researchers.

Sincerely,

Uthkala Urubail
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Housing & Merchandising.
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APPENDIX B

QUESTIONNAIRE

QUESTIONNAIRE

Section I: Your participation in a consumer-based virtual community
Virtual communities are defined as a network of people with common interests communicating with each other electronically. For example, consumers may communicate and interact with other consumers using electronic bulletin boards, discussion board, live chat rooms, etc.

Please read the following questions and mark on the appropriate answer.

Are you currently participating in a consumer-based virtual community hosted by a retailer or national brand company? (Example, eBay.com, Amazon.com, Moosejaw.com etc.)

- o Yes → Please proceed to following questions
- o No → Please stop now. Thank you for your participation.

In the following space, please write one virtual community hosted by a retailer or national brand company in which you are most active.

How many years you have been participating in this virtual community?
_____Years
(Please use decimal points. For example, if you have participated for one year and 6 months, please put 1.5 years)

Please indicate how frequently you are using each of the virtual community formats by selecting the option that best describes your answer.

	Never	*Rarely*	*Sometimes*	*Frequently*	*Very Frequently*	*Don't Know*
Website bulletin boards	❍	❍	❍	❍	❍	❍
Usenet news groups	❍	❍	❍	❍	❍	❍
Real-time online-chat systems	❍	❍	❍	❍	❍	❍
Web-based chat rooms	❍	❍	❍	❍	❍	❍
Multi-player virtual games	❍	❍	❍	❍	❍	❍
Multi-user domains or Dungeon (MUD game)	❍	❍	❍	❍	❍	❍
Other (Please specify_____)	❍	❍	❍	❍	❍	❍

How much time do you spend chatting online, contributing to bulletin boards, e-mailing, etc. in this virtual community?

- o Almost everyday
- o Once or twice a week
- o Three or four times a week
- o Once a month
- o Less than once a month

Section II: Please indicate your extent of agreement and disagreement with the following statements regarding your participation in the virtual community you wrote above.

	Strongly Disagree	***Disagree***	***Neutral***	***Agree***	***Strongly Agree***
Participating in a virtual community was a challenge for me.	❍	❍	❍	❍	❍
Using this community website provided a good test of my skills to meet challenges.	❍	❍	❍	❍	❍
It was hard to do what I wanted to do in the community site.	❍	❍	❍	❍	❍
I found it was hard for me to make a decision based on the information on the community site.	❍	❍	❍	❍	❍
Overall, I felt participating in this community site was pretty easy	❍	❍	❍	❍	❍
I was competent to carry out the virtual community activities.	❍	❍	❍	❍	❍
I understood the information on the community website well.	❍	❍	❍	❍	❍
I had enough skills to do what I intended to do in the virtual community.	❍	❍	❍	❍	❍
I was confused by the virtual community's website's design.	❍	❍	❍	❍	❍
I knew how the community site works.	❍	❍	❍	❍	❍
I find participating in virtual community enjoyable.	❍	❍	❍	❍	❍
I participate in virtual community for pleasure.	❍	❍	❍	❍	❍
Browsing in community website is an agreeable way of passing time.	❍	❍	❍	❍	❍
I find this community website useful.	❍	❍	❍	❍	❍
The information on the community site is interesting to me.	❍	❍	❍	❍	❍
I find virtual community adds value in our life.	❍	❍	❍	❍	❍

Section III: When answering the questions, please think of <u>the particular virtual community you wrote above</u> and indicate the extent of your agreement or disagreement with each statement.

	Strongly Disagree	*Disagree*	*Neutral*	*Agree*	*Strongly Agree*
Messages or information those are relevant to current discussion topics are posted and exchanged.	❍	❍	❍	❍	❍
Many community members participate or are involved in the topics being discussed.	❍	❍	❍	❍	❍
Community members actively interact with each other.	❍	❍	❍	❍	❍
The posted information or messages are useful.	❍	❍	❍	❍	❍
Many relevant topics are discussed.	❍	❍	❍	❍	❍
There are many members in this virtual community.	❍	❍	❍	❍	❍
Members in this community have knowledge/experience in regards to the discussion topic.	❍	❍	❍	❍	❍
Members of this community and I share similar characteristics (example, age, gender, education, etc.).	❍	❍	❍	❍	❍
This virtual community requires members to be registered.	❍	❍	❍	❍	❍
This virtual community has policies to deter uncivil behavior.	❍	❍	❍	❍	❍
The policies are effective in deterring uncivil behavior.	❍	❍	❍	❍	❍
The policies help foster a good relationship with community members.	❍	❍	❍	❍	❍
The policies help foster a trusting relationship with community members.	❍	❍	❍	❍	❍
Reading or sending messages in this virtual community are simple.	❍	❍	❍	❍	❍
Learning to read or send messages in this virtual community was easy.	❍	❍	❍	❍	❍
I am satisfied with the dialogue in this virtual community.	❍	❍	❍	❍	❍
I am satisfied with the social support in this virtual community.	❍	❍	❍	❍	❍
I remember contents of the dialogue that goes on in this virtual community.	❍	❍	❍	❍	❍
It is easy to find information that is useful to me.	❍	❍	❍	❍	❍
It is easy to make errors when accessing information.	❍	❍	❍	❍	❍
It does not take a long time to navigate through the website to find something.	❍	❍	❍	❍	❍
I can usually get what I want on this website in a reasonable time.	❍	❍	❍	❍	❍
I am satisfied with the usability and navigation functions of the website.	❍	❍	❍	❍	❍
I can easily access required software components for the virtual community.	❍	❍	❍	❍	❍
I frequently incur problems when downloading and running required software for the virtual community.	❍	❍	❍	❍	❍
The time it takes to download and run required software for the virtual community is reasonable.	❍	❍	❍	❍	❍

Section IV: Please read the below paragraph

The word "flow" is used to describe a state of mind sometimes experienced by people who are deeply involved in some activity. One example of flow is the case where a professional athlete is playing exceptionally well and achieves a state of mind where nothing else matters but the game; he or she is completely and totally immersed in it. The experience is not exclusive to athletics: Many people report this state of mind when playing games, engaging in hobbies, or working. Activities that lead to flow completely captivate a person for some period of time. When one is in flow, time may seem to stand still, and nothing else seems to matter. Flow may not last for a long time on any particular occasion, but it may come and go over time. Flow has been described as an intrinsically enjoyable experience

Think about your participation in the virtual community you wrote above	***Strongly Disagree***	***Disagree***	***Neutral***	***Agree***	***Strongly Agree***
I have experienced "flow" on the virtual community activities.	❍	❍	❍	❍	❍
I have experienced "flow" every time I participate in the virtual community.	❍	❍	❍	❍	❍
Most of the time I use the virtual community, I feel that I am in "flow".	❍	❍	❍	❍	❍

Section VI. When answering the questions below, please: Think of the particular virtual community you wrote above.

	Strongly Disagree	***Disagree***	***Neutral***	***Agree***	***Strongly Agree***
I seldom consider switching to another virtual community.	❍	❍	❍	❍	❍
As long as the present interaction continues, I doubt that I would switch to different community.	❍	❍	❍	❍	❍
I like using this virtual community.	❍	❍	❍	❍	❍
To me this virtual community is the best one to participate in.	❍	❍	❍	❍	❍
I believe that this is my favorite virtual community.	❍	❍	❍	❍	❍
When I need to participate in a virtual community, this virtual community is my first choice.	❍	❍	❍	❍	❍
I try to participate in this virtual community whenever I feel like it.	❍	❍	❍	❍	❍

Section VII: This information is only needed for statistical propose.

What is your gender?

- o Male
- o Female

What is your age? _____

Which year?

- o Freshmen
- o Sophomore
- o Junior
- o Senior
- o Others

What is your major college?

- o Agricultural Sciences and Natural Resources
- o Arts & Sciences
- o Center for Health Sciences
- o Center for Veterinary Health Sciences
- o Education
- o Engineering, Architecture and Technology
- o Graduate College
- o Human Environmental Sciences
- o William S. Spears School of Business

Please specify your major _____

What is your monthly income range?

- o Less than $ 1,000
- o $1,000 to $1,999
- o $2,000 to $2,999
- o $3,000 to $3,999
- o Above $4, 000

APPENDIX C

OKLAHOMA STATE UNIVERSITY

INSTITUTIONAL REVIEW BOARD

Oklahoma State University Institutional Review Board

Date:	Tuesday, February 27, 2007
IRB Application No	HE0711
Proposal Title:	Antecedents and Consequences of Flow State in Virtual Communities Hosted by Companies
Reviewed and Processed as:	Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 2/26/2008

Principal Investigator(s)

Uthkala Urubail
726 S. Univ. Place
Stillwater, OK 74075

Byoungho Jin
431 HES
Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☑ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,

Sue C. Jacobs, Chair
Institutional Review Board

VITA

Urubail Uthkala

Candidate for the Degree of

Master of Science

Thesis: ANTECEDENTS AND CONSEQUENCES OF FLOW STATE IN VIRTUAL COMMUNITIES HOSTED BY COMPANIES

Major Field: Apparel Merchandising

Biographical:

Personal Data: Born in Puttur, India, on March 17, 1982

Education: Received Bachelor of Science degree in Fashion Designing from Mangalore University, Mangalore, India. Completed the requirements for the Master of Science degree at Oklahoma State University, Stillwater, Oklahoma, in December 2007.

Experience: Completed an in-house internship at Gokuldas Images, Bangalore, India, which provided hands-on insight into the various facets of apparel production, quality control, and merchandising. Taught pertinent courses in the field of Quality Control and Production Management at Karavali College, Mangalore, India. Employed by Oklahoma State University, Department of Design, Housing and Merchandising, as a graduate research assistant and a graduate assistant from fall 2004 to present.

Professional Memberships: Kappa Omicron Nu National Honor Society, Golden Key International Honor Society, International Textile and Apparel Association.

Name: Urubail Uthkala Date of Degree: December, 2007

Institution: Oklahoma State University Location: Stillwater, Oklahoma

Title of Study: ANTECEDENTS AND CONSEQUENCES OF FLOW STATE IN VIRTUAL COMMUNITIES HOSTED BY COMPANIES

Pages in Study: 81 Candidate for the Degree of Master of Science

Major Field: Apparel Merchandising

Scope and Method of Study: The proposed model was designed to understand (1) impacts of antecedents of virtual community participation (perceived Internet skills, perceived challenges, intrinsic motivation, extrinsic motivation, sociability, and usability) on virtual community participation level, (2) the relationship between the virtual community participation level and flow state, and (3) a consequence of virtual community participation level and flow state. The data were collected in Oklahoma State University classrooms. Students above 18 years of age and who had participated in virtual community activities were requested to complete the survey. A total of 141 usable data sets were obtained. Multiple Regression Analysis was employed to test the hypotheses.

Findings and Conclusions: The results of this study indicated that the antecedents intrinsic motivation and usability have a significant influence on virtual community participation. However antecedents Internet skills and challenges, extrinsic motivation, and sociability did not have a significant influence on virtual community participation. The relationship between the skills and challenges and flow state was also not significant. The idea of virtual community being an important tool for achieving flow state was highly significant. Only flow state significantly influenced the development of loyalty towards the virtual community, whereas virtual community participation did not have a significant influence on virtual community loyalty. This research will assist companies in gaining insight into the factors that increase consumer participation in virtual communities, the role of flow state in virtual communities, and the impact of consumer loyalty on virtual communities. Overall, the proposed model will provide companies hosting virtual communities with viable marketing strategies.

ADVISER'S APPROVAL: Dr. Byoungho Jin